

Dr. Duke's Phytochemical and Ethnobotanical Database

Chemicals Found in Pinus sylvestris

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
30	(+)-CATECHIN	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
30	(+)-CATECHIN	Leaf	--	--		
30	(+)-CATECHIN	Bark	--	--		
7	(+)-GALLOCATECHIN	Leaf	--	--		
38	(-)-EPICATECHIN	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
67	1,8-CINEOLE	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	ABIETIC-ACID	Resin, Exudate, Sap	180000	180000	-1.4142135623730954	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	ABIETIC-ACID	Shoot	--	--		
19	ACETYL-CHOLINE	Sprout Seedling	--	--		
11	ADENINE	Flower	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	ALPHA-CADINOL	Leaf	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
3	ALPHA-CADINOL	Leaf Essent. Oil	--	19000	-1	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	ALPHA-CAROTENE	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	ALPHA-HUMULENE	Leaf Essent. Oil	--	4600	-0.5601171534351933	
11	ALPHA-PHELLANDRENE	Leaf	--	--		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
11	ALPHA-PHELLANDRENE	Leaf Essent. Oil	--	--		
11	ALPHA-PHELLANDRENE	Essential Oil	--	--		
28	ALPHA-PINENE	Root Essent. Oil	175000	200000	1.0055904952191068	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
28	ALPHA-PINENE	Leaf	600	2500	-0.062233154531755666	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
28	ALPHA-PINENE	Resin, Exudate, Sap	--	--		
28	ALPHA-PINENE	Leaf Essent. Oil	--	312000	0.9632438931581422	
28	ALPHA-PINENE	Essential Oil	--	--		
28	ALPHA-PINENE	Flower	--	--		
28	ALPHA-PINENE	Plant	--	--		
28	ALPHA-PINENE	Twig	--	--		
13	ALPHA-TERPINENE	Root	--	--		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
13	ALPHA-TERPINENE	Leaf	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
13	ALPHA-TERPINENE	Leaf Essent. Oil	--	34500	2.2661395470708254	
13	ALPHA-TERPINENE	Essential Oil	--	--		
23	ALPHA-TERPINEOL	Leaf Essent. Oil	6500	167000	2.509529498910562	
1	ANDROSTENEDIONE	Pollen Or Spore	--	--		
36	ANETHOLE	Leaf Essent. Oil	--	--		
7	ANISALDEHYDE	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
112	ASCORBIC-ACID	Leaf	3000	3000	-0.16555832480808047	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
20	BENZOIC-ACID	Leaf	--	--		
53	BETA-CAROTENE	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
5	BETA-ELEMENE	Essential Oil	--	--		
2	BETA-MYRCENE	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	BETA-MYRCENE	Resin, Exudate, Sap	--	--		
3	BETA-PHELLANDRENE	Resin, Exudate, Sap	--	--		
3	BETA-PHELLANDRENE	Leaf Essent. Oil	--	13000	0.1553903686246635	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	BETA-PHELLANDRENE	Essential Oil	--	--		
3	BETA-PHELLANDRENE	Flower	--	--		
3	BETA-PHELLANDRENE	Twig	--	--		
13	BETA-PINENE	Root Essent. Oil	175000	200000	1.6637047098912103	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
13	BETA-PINENE	Leaf	200	1500	1.7833577159120335	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
13	BETA-PINENE	Resin, Exudate, Sap	--	--		
13	BETA-PINENE	Leaf Essent. Oil	--	65000	2.10395512758855	
13	BETA-PINENE	Essential Oil	--	--		
13	BETA-PINENE	Flower	--	--		
13	BETA-PINENE	Twig	--	--		
3	BETA-SELINENE	Wood	--	--		
47	BETA-SITOSTEROL	Bark	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
47	BETA-SITOSTEROL	Plant	--	--		
47	BETA-SITOSTEROL	Shoot	--	--		
47	BETA-SITOSTEROL	Pollen Or Spore	--	--		
3	BETA-TERPINEOL	Leaf Essent. Oil	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
35	BORNEOL	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
35	BORNEOL	Leaf Essent. Oil	6500	62000	0.16251562096096972	
35	BORNEOL	Essential Oil	--	--		
12	BORNYL-ACETATE	Leaf	60	175	-0.314398718058706	
6	BUTYRIC-ACID	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
102	CAFFEIC-ACID	Leaf	--	--		
2	CAMPESTEROL	Bark	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	CAMPESTEROL	Plant	--	--		
9	CAMPHENE	Resin, Exudate, Sap	--	--		
9	CAMPHENE	Essential Oil	--	--		
9	CAMPHENE	Leaf Essent. Oil	--	35000	0.3677628391862796	
41	CAMPHOR	Leaf Essent. Oil	--	--		
3	CAPRIC-ACID	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	CAPROIC-ACID	Leaf	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
31	CARYOPHYLLENE	Leaf	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
31	CARYOPHYLLENE	Leaf Essent. Oil	--	--		
10	CHAMAZULENE	Leaf	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
77	CHLOROGENIC-ACID	Leaf	--	--		
20	CHOLINE	Flower	3400	3400	0.43193421279068084	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
53	CITRAL	Leaf	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
20	CITRONELLAL	Leaf Essent. Oil	--	--		
1	COPAENE	Resin, Exudate, Sap	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
10	CUMINALDEHYDE	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
19	D-LIMONENE	Leaf	--	--		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	DEHYDROABIETANE	Resin, Exudate, Sap	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	DEHYDROABIETANE	Wood	--	--		
5	DEHYDROABIETIC-ACID	Resin, Exudate, Sap	70000	70000		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
5	DEHYDROABIETIC-ACID	Shoot	--	--		
8	DELTA-3-CARENE	Root Essent. Oil	400000	500000		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
8	DELTA-3-CARENE	Resin Essent. Oil	13000	360000		
9	DELTA-CADINENE	Resin, Exudate, Sap	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
9	DELTA-CADINENE	Essential Oil	--	--		
9	DELTA-CADINENE	Leaf Essent. Oil	--	22300		
1	DELTA-CADINOL	Leaf Essent. Oil	--	9100		
3	DIHYDROQUERCETIN	Bark	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
7	DIPENTENE	Resin, Exudate, Sap	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
40	EPICATECHIN	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
12	ESTRAGOLE	Plant	--	--		Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
12	ESTRAGOLE	Resin, Exudate, Sap	--	106670		
12	ESTRAGOLE	Leaf Essent. Oil	--	--		
5	EUGENOL-METHYL-ETHER	Plant	--	--		Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
6	FENCHONE	Leaf Essent. Oil	--	--		
61	FERULIC-ACID	Bark	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
8	FRUCTOSE	Bark	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
8	FRUCTOSE	Leaf	25000	25000	0.31537077862545454	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
6	FURFURAL	Root	--	--		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	GALACTOSE	Leaf	30	30	-1	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	GAMMA-CAROTENE	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
11	GAMMA-TERPINENE	Leaf Essent. Oil	--	5000	-0.6592175679045217	
11	GAMMA-TERPINENE	Essential Oil	--	--		
11	GAMMA-TERPINENE	Resin, Exudate, Sap	--	--		
3	GINNOL	Pollen Or Spore	--	--		
1	GLUCOSAMINE	Shoot	--	--		
7	GLUCOSE	Bark	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
7	GLUCOSE	Leaf	22000	22000	-0.42788248580564037	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	HUMULENE	Essential Oil	--	--		
7	INDOLE-3-ACETIC-ACID	Shoot	--	--		
7	INDOLE-3-ACETIC-ACID	Sprout Seedling	--	--		
2	ISOPIMARIC-ACID	Plant	--	--		J.S. Glasby Dict.PIs Containing 2ndary Metabolite. 1991.
2	ISOPIMARIC-ACID	Shoot	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	L-LIMONENE	Leaf	--	--		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
60	LIMONENE	Resin, Exudate, Sap	--	--		
60	LIMONENE	Leaf Essent. Oil	--	--		
60	LIMONENE	Essential Oil	--	--		
60	LIMONENE	Flower	--	--		
60	LIMONENE	Shoot	--	--		
1	LINARIN	Leaf	--	--		
15	LUTEIN	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	MALONIC-ACID	Bark	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	MALTOSE	Plant	--	--		
22	MYRCENE	Leaf Essent. Oil	--	34500	-0.23247237005406013	
22	MYRCENE	Essential Oil	--	--		
22	MYRCENE	Flower	--	--		
22	MYRCENE	Twig	--	--		
1	N-NONACOSANE	Bark	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
4	NEOABIETIC-ACID	Resin, Exudate, Sap	180000	180000		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
4	NEOABIETIC-ACID	Shoot	--	--		
2	NEOXANTHIN	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
25	P-COUMARIC-ACID	Pollen Or Spore	--	--		
16	P-CYMENE	Resin, Exudate, Sap	--	--		
16	P-CYMENE	Leaf Essent. Oil	--	1600	-0.7549604300774599	
13	P-HYDROXY-BENZOIC-ACID	Bark	--	--		
3	P-HYDROXYACETOPHENONE	Leaf	--	--		
5	P-METHOXY-CINNAMIC-ACID	Pollen Or Spore	--	--		
13	PALMITIC-ACID	Pollen Or Spore	--	--		
2	PECTOLINARIN	Leaf	--	--		
26	PHENOL	Wood	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
5	PINITOL	Bark	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
5	PINITOL	Leaf	20000	20000	1	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
9	PINOCEMBRIN	Wood	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
5	PINOSYLVIN	Wood	2500	8000		
5	PINOSYLVIN	Wood	--	--		
5	PINOSYLVIN	Shoot	--	--		
1	PROCYANIDIN-B-1	Leaf	--	--		
2	PROCYANIDIN-B-3	Leaf	--	--		
1	PROCYANIDIN-B-6	Leaf	--	--		
1	PROCYANIDIN-C-2	Leaf	--	--		
1	PRODELPHINIDIN	Leaf	--	--		
2	PROPIONALDEHYDE	Root	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
43	PROTOCATECHUIC-ACID	Bark	--	--		
176	QUERCETIN	Bark	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
176	QUERCETIN	Leaf	--	--		
2	QUERCETIN-3-O-BETA-D-GLUCOSIDE	Leaf	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
6	QUERCIMERITRIN	Leaf	--	--		
1	QUINIC-ACID	Bark	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	RAFFINOSE	Bark	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	RAFFINOSE	Leaf	8000	8000		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	RHODOXANTHIN	Leaf	--	--		
5	SABINENE	Leaf	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
5	SABINENE	Leaf Essent. Oil	--	4500	-0.5646050792348103	
5	SABINENE	Essential Oil	--	--		
14	SHIKIMIC-ACID	Bark	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	STACHYOSE	Plant	--	--		
12	STIGMASTEROL	Plant	--	--		
14	SUCROSE	Bark	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
14	SUCROSE	Leaf	17000	17000	-0.4419983985239393	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
14	SULFUR	Leaf	--	--		
35	TANNIN	Bark	169000	169000	0.2441891045370524	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
17	TAXIFOLIN	Leaf	--	--		
23	TERPINEN-4-OL	Essential Oil	--	--		
23	TERPINEN-4-OL	Leaf Essent. Oil	--	--		
18	TERPINEOL	Root	--	--		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
9	TERPINOLENE	Leaf Essent. Oil	--	26000	1.7189798888776386	
9	TERPINOLENE	Resin, Exudate, Sap	--	--		
9	TERPINOLENE	Essential Oil	--	--		
9	TERPINOLENE	Flower	--	--		
11	TESTOSTERONE	Pollen Or Spore	--	--		
9	VALERIC-ACID	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
24	VANILLIC-ACID	Bark	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	VIOLAXANTHIN	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	XYLOSE	Leaf	200	200		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	YLANGENE	Essential Oil	--	--		